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01/16/2004

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EXAMINER

SANEI, HANA ASMAT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/758,596	Applicant(s) NISHIKAWA ET AL.	
	Examiner HANA A. SANEI	Art Unit 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-10 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 3,6 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/15/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

Claim(s) 14 are objected to because of the following informalities: Examiner suggests applicant modify the typographical error regarding the term “scone” to – second --.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 1-2, 4-5, 7-10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eida et al (US 2001/0050532) in view of Ogura et al (US 6271902).

Regarding Claim 1, Eida teaches a plurality of color pixels (R, G, B pixels created by filters, See at least Fig. 3, ¶ [0067], [0201]); a plurality of color filter layers (11, “color filter,” [0067]) provided for the color pixels on an insulating substrate (1, “supporting substrate”), each of the color filter layers (11) allowing a transmission of light (as indicated by the directional “arrow,” in Fig. 3) of a color of a corresponding color pixel;

an anode layer (2, "lower electrode") formed above each of the color filter layers; a white electroluminescent layer (4, "organic EL element emitting white light," [0201]) formed on the anode layers (2); and a cathode layer (5, "opposite electrode," [0067]) formed on the white electroluminescent layer. Eida fails to teach the end portions of the color filter being tapered and overlapped.

In the same field of endeavor of **color filters**, Ogura teaches a device (See at least Figs. 3G, 4) having color filter layers (4, "coloring layers," Col. 12, lines 63-66); wherein end portions of the color filter layers are tapered, and the tapered end portions of adjacent color filter layers overlap each other ("edge portions of the coloring layer 4 form convex portions in the overlapped portions," Col. 12, lines 65-69 -- Col. 13, lines 1-3, Fig. 3G) in order to provide a continuous distribution of optical color filters adjacent one another with good surface smoothness and excellent optical properties, thereby reducing power consumption and providing a high speed response (Col. 6, lines 20-24).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the configuration of the color filters, as disclosed by Ogura, in the substrate of Eida in order to a continuous distribution of optical color filters adjacent one another with good surface smoothness and excellent optical properties, thereby reducing power consumption and providing a high speed response.

Regarding Claim 2, Eida-Ogura teaches that a step height at an overlapping portion of the color filter layers ("height of the overlapped portion is about 1.2 to 1.25 mm," Col. 13, lines 12-17 of Ogura) is smaller than a thickness of the white electroluminescent layer (5 mm, [0101] of Eida).

Regarding Claim 4, Eida teaches a plurality of color filter layers (11, “color filter,” [0067]; See at least Fig. 3, ¶ [0067], [0201]) provided for the color pixels (R, G, B pixels created by filters) on an insulating substrate (1, “supporting substrate”), each of the color filter layers (11) allowing a transmission of light (as indicated by the directional “arrow,” in Fig. 3) of a color of a corresponding color pixel; a planarization insulating film (10, “planarizing layer,” [0067]) formed on the color filter layers (11); an anode layer (2, “lower electrode”) formed on the planarization insulating film (10); a white electroluminescent layer (4, “organic EL element emitting white light,” [0201]) formed on the anode layers (2); and a cathode layer (5, “opposite electrode,” [0067]) formed on the white electroluminescent layer. Eida fails to teach the end portions of the color filter being tapered and overlapped.

In the same field of endeavor of **color filters**, Ogura teaches a device (See at least Figs. 3G, 4) having color filter layers (4, “coloring layers,” Col. 12, lines 63-66); wherein end portions of the color filter layers are tapered, and the tapered end portions of adjacent color filter layers overlap each other (“edge portions of the coloring layer 4 form convex portions in the overlapped portions,” Col. 12, lines 65-69 -- Col. 13, lines 1-3, Fig. 3G) in order to provide a continuous distribution of optical color filters adjacent one another with good surface smoothness and excellent optical properties, thereby reducing power consumption and providing a high speed response (Col. 6, lines 20-24).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the configuration of the color filters, as disclosed by Ogura, in the substrate of Eida in order to a continuous distribution of optical color filters

adjacent one another with good surface smoothness and excellent optical properties, thereby reducing power consumption and providing a high speed response.

Regarding Claim 5, Eida-Ogura teaches that a step height at an overlapping portion of the color filter layers (“height of the overlapped portion is about 1.2 to 1.25 mm,” Col. 13, lines 12-17 of Ogura) is smaller than a thickness of the white electroluminescent layer (5 mm, [0101] of Eida).

Regarding Claim 7, Eida teaches that the planarization insulating film comprises an inorganic insulating film (SiO₂ Planarizing layer, [0210], [0213]).

Regarding Claim 8, Eida teaches that the inorganic insulating film is a silicon oxide film, a TEOS film or a siliconnitride film (SiO₂ Planarizing layer, [0213]).

Regarding Claim 9, Eida teaches a plurality of color filter layers (11, “color filter,” [0067]; See at least Fig. 3, ¶ [0067], [0201]) provided for the color pixels (R, G, B pixels created by filters) on an insulating substrate (1, “supporting substrate”), each of the color filter layers (11) allowing a transmission of light (as indicated by the directional “arrow,” in Fig. 3) of a color of a corresponding color pixel; a first planarization insulating film (10, “planarizing layer,” [0067]) formed on the color filter layers (11); anode layers (2, “lower electrode”) formed on the first planarization insulating film (10); a second planarization insulating film (3, “intermediate insulating layer,” [0067]) formed so as to cover end portions of the anode layers (2); a white electroluminescent layer (4, “organic EL element emitting white light,” [0201]) formed on the anode layers (2); and a cathode layer (5, “opposite electrode,” [0067]) formed on the white electroluminescent layer. Eida fails to teach the end portions of the color filter being tapered and overlapped.

In the same field of endeavor of **color filters**, Ogura teaches a device (See at least Figs. 3G, 4) having color filter layers (4, "coloring layers," Col. 12, lines 63-66); wherein end portions of the color filter layers are tapered, and the tapered end portions of adjacent color filter layers overlap each other ("edge portions of the coloring layer 4 form convex portions in the overlapped portions," Col. 12, lines 65-69 -- Col. 13, lines 1-3, Fig. 3G) in order to provide a continuous distribution of optical color filters adjacent one another with good surface smoothness and excellent optical properties, thereby reducing power consumption and providing a high speed response (Col. 6, lines 20-24).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the configuration of the color filters, as disclosed by Ogura, in the substrate of Eida in order to a continuous distribution of optical color filters adjacent one another with good surface smoothness and excellent optical properties, thereby reducing power consumption and providing a high speed response.

Regarding Claim 10, Eida-Ogura teaches that a step height at an overlapping portion of the color filter layers ("height of the overlapped portion is about 1.2 to 1.25 mm," Col. 13, lines 12-17 of Ogura) is smaller than a thickness of the white electroluminescent layer (5 mm, [0101] of Eida).

Regarding Claim 12, Eida teaches that the first planarization insulating film comprises an inorganic insulating film (SiO₂ Planarizing layer, [0210], [0213]).

Regarding Claim 13, Eida teaches that the inorganic insulating film is a silicon oxide film, a TEOS film or a siliconnitride film (SiO₂ Planarizing layer, [0213]).

Regarding Claim 14, Eida teaches a first pixel of a first color (R or G or B pixels created by filters, See at least Fig. 3, ¶ [0067], [0201]); a second pixel (R or G or B pixels created by filters, Fig. 3) of a second color disposed adjacent the first pixel; a first color filter layer (11-R, "color filter," [0067]) provided for the first pixel and allowing a transmission of light (as indicated by the directional "arrow," in Fig. 3) of the first color; a second color filter layer (11-G) provided for the second pixel and allowing a transmission of light of the second color; a first anode layer (2, "lower electrode") formed on the first color filter layer (11-R); a second anode layer (2nd 11) formed on the second color filter layer (11-G); a white electroluminescent layer (4, "organic EL element emitting white light," [0201]) formed on the first and second anode layers (1st, 2nd 11); and a cathode layer (5, "opposite electrode," [0067]) formed on the white electroluminescent layer. Eida fails to teach the end portions of the first and second color filter layers being tapered and overlapped.

In the same field of endeavor of **color filters**, Ogura teaches a device (See at least Figs. 3G, 4) having color filter layers (4, "coloring layers," Col. 12, lines 63-66); wherein end portions of the color filter layers are tapered, and the tapered end portions of adjacent color filter layers overlap each other ("edge portions of the coloring layer 4 form convex portions in the overlapped portions," Col. 12, lines 65-69 -- Col. 13, lines 1-3, Fig. 3G) in order to provide a continuous distribution of optical color filters adjacent one another with good surface smoothness and excellent optical properties, thereby reducing power consumption and providing a high speed response (Col. 6, lines 20-24).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the configuration of the color filters, as disclosed by Ogura, in the substrate of Eida in order to a continuous distribution of optical color filters adjacent one another with good surface smoothness and excellent optical properties, thereby reducing power consumption and providing a high speed response.

Regarding Claim 15, Eida-Ogura teaches that a thickness of the first color filter layer (red, 4) is smaller than a thickness of the second color filter layer (green, 4, the overlapped portion of the green pigment of 4 essentially has a *partial portion* that is greater in thickness than the red pigment of 4, Fig. 3G of Ogura).

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Pat. No. 6326936 to Ingnas et al. teaches that the interchanging of a liquid crystal element with an electroluminescent element is principally similar, for each device, in the driving of the devices.

Pat. No. US 6309486 to Kawaguchi et al.

Allowable Subject Matter

A. Claim 3 is objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art of record teaches a color electroluminescent display device comprising: a plurality of color pixels; a plurality of color filter layers provided for the color pixels on an insulating substrate, each of the color filter layers allowing a transmission of light of a color of a corresponding color pixel; an anode layer formed above each of the color filter layers; a white electroluminescent layer formed on the anode layers; and a cathode layer formed on the white electroluminescent layer, wherein end portions of the color filter layers are tapered, and the tapered end portions of adjacent color filter layers overlap each other.

However, the prior art of record neither shows nor suggests a motivation for the color filter layers having different thicknesses and end portions of thinner color filter layers being disposed above end portions of thicker color filter layers as set forth in Claim 3.

B. Claim 6 is objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art of record teaches a color electroluminescent display device having a plurality of color pixels, comprising: a plurality of color filter layers provided for the color pixels on an insulating substrate, each of the color filter layers allowing a transmission of light of a color of a corresponding color pixel; a planarization insulating film formed on the color filter layers; anode layers formed on the planarization insulating film; a white electroluminescent layer formed on the anode layers; and a cathode layer formed on

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the white electroluminescent layer, wherein end portions of the color filter layers are tapered, and the tapered end portions of adjacent color filter layers overlap each other.

However, the prior art of record neither shows nor suggests a motivation for the color filter layers having different thicknesses and end portions of thinner color filter layers being disposed above end portions of thicker color filter layers as set forth in Claim 6.

C. Claim 11 is objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art of record teaches a color electroluminescent display device having a plurality of color pixels, comprising: a plurality of color filter layers provided for the color pixels on an insulating substrate, each of the color filter layers allowing a transmission of light of a color of a corresponding color pixel; a first planarization insulating film formed on the color filter layers; anode layers formed on the first planarization insulating film; a second planarization insulating film formed so as to cover end portions of the anode layers; a white electroluminescent layer formed on the anode layers; and a cathode layer formed on the white electroluminescent layer; wherein end portions of the color filter layers are tapered, and the tapered end portions of adjacent color filter layers overlap each other.

However, the prior art of record neither shows nor suggests a motivation for the color filter layers having different thicknesses and end portions of thinner color filter

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layers being disposed above end portions of thicker color filter layers as set forth in Claim 11.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hana A. Sanei whose telephone number is (571)-272-8654. The examiner can normally be reached on Monday- Friday, 9 am - 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on (571) 272-2303. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hana A. Sanei/
Examiner

/Joseph L. Williams/
Primary Examiner, Art Unit 2889

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